



# The Harbinger

Newsletter of the  
Illinois Native Plant Society

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"...dedicated to the study, appreciation, and conservation of the native flora and natural communities of Illinois."



Tubercled orchid (*Platanthera flava* var. *flava*). Photo: Chris Benda.

A mass bloom of the state endangered orchid *Platanthera flava* var. *flava* was observed this past July by the Plants of Concern southern Illinois team. This rare orchid is only extant in Johnson, Massac, and Pope counties where over 10,000 individuals were counted this year. It will be interesting to see how they do next year.

∞ Chris Benda, Editor

## In This Issue

- President's Message
- Welcome New Members
- INPS News
- 2021 INPS Grants Announced
- Roundpod Primrose-Willow Rediscovered
- Species Composition in Illinois Wetlands
- Book Review: Wildflowers of the Midwest
- Invasive Species: Japanese Chaff Flower
- Other News & Web Links

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## **Message from the President**



Dear INPS Members,

Happy summer! I have three pieces of exciting news to share with you. First, the state governing board and local chapters are planning a hybrid Annual Gathering to be held the week of September 11-18. Chapters will hold in-person events during that week, and we will have a statewide membership meeting on Saturday,

September 11 via Zoom. We are planning an evening of research presentations about climate change in Illinois, followed by a discussion on Thursday September 16, also via Zoom. Registration is available on the INPS website, <https://illinoisplants.org/2021-annual-gathering/>. If you would like to help your chapter plan a walk, workshop, or other event during that week, please contact your chapter president.

Next, we are looking for a new INPS mascot. French's shooting star, which is depicted on the logo that INPS currently uses, is not widely distributed in Illinois and we would like to have a plant that is representative of the whole state on our logo. We are soliciting suggestions for a plant that occurs statewide. Please use the online form to suggest a new mascot, to be made into a new logo:

<https://illinoisplants.org/nominate-a-mascot-for-the-illinois-native-plant-society>.

Finally, I am pleased to announce that INPS has funded nine grant projects in 2021 through our survey and research grant programs. Please see page 4 for the names of awardees and a description of the projects. I am happy to support these projects and look forward to learning from the results they generate. Our 2020 grantees have concluded their funded projects, and you can learn more about their work on the INPS website.

Sincerely,

Emily Dangremond  
President INPS

## **INPS Chapters**

### **CENTRAL CHAPTER**

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### **QUAD CITIES CHAPTER**

#### **Rock Island**

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### **SOUTHERN CHAPTER**

#### **Carbondale**

Chris Evans (President)

[southernillinoisplants@gmail.com](mailto:southernillinoisplants@gmail.com)

Check out the [Illinois Native Plant Society Events Calendar](#) for Chapter meetings and workshops.

## Welcome New Members

### Forest Glen Chapter

Mary Carlson  
Brian Charles

### Kankakee Torrent Chapter

Michele Blumenthal  
Sandrine Clairardin

### Grand Prairie Chapter

Nora Few  
Katy Lovell  
William Phelan  
Cheryl Williams-Molck

### Quad Cities Chapter

Grant Fessler

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Jeffrey P Conte  
Jennifer Krick  
Adams Krystle  
Sherlyn Miner  
Jeff & Susan Moore  
Trudy Phillips  
Theresa Piskackova  
Emily Wellman  
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### Southern Chapter

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Michael Homoya  
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### Northeast Chapter

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Kristie Daniszewski  
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Laura Dufford  
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Zach Taylor  
Sally Townsend  
Theresa Virgilio  
Fran White

### At-Large

Friends of Illinois Nature  
Preserves  
Michael Jaskula

## INPS News

### Annual Gathering: September 11 & September 16

There will be two Zoom meetings instead of an in-person gathering this year.

- Member's night on Zoom, September 11 at 5pm. The program will include introduction of the state governing board, results of the vote to change bylaws and update mission statement, instructions for the *Asteraceae* competition on iNaturalist (Sept. 11-18), highlights from chapter outings, and Research Grant awardee presentations.
- Keynote presentations on Zoom, September 16 at 7pm, featuring Dr. Brenda Molano-Flores, Illinois Natural History Survey; Dr. Tom Simpson, McHenry County Conservation District; and Dr. David Zaya, Illinois Natural History Survey and Dr. Carol Augspurger, University of Illinois.

Register at <https://illinoisplants.org/2021-annual-gathering-virtual/>.



## 2021 INPS Grants Announced

The Illinois Native Plant Society is excited to announce its 2021 roster of Research and Survey Grant recipients. An interesting variety of projects from different parts of the state will conduct research on Illinois native plants in the field or the lab, or will implement field surveys of very rare listed species to provide data to the Illinois Natural Heritage Database.

### Research Grant Recipients and Projects

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**Karen Glennemeier, Senior Ecologist, Habitat Research, LLC**

**Project: Control of *Solidago altissima* in open oak woodlands.**

*Solidago altissima* (tall goldenrod) is native to North America but spreads aggressively and often must be actively controlled in order to support native plant diversity. Many stewards are searching for the most effective and appropriate control methods within open oak woodlands where light levels have recently increased due to ecological management. In 2020, with the support of INPS Research Grant funding, we began testing the effectiveness of controlling *S. altissima* with two methods that have shown anecdotal promise: the removal of plants through scything/clipping and the interseeding of native species among *S. altissima* patches.

1. We scythed/clipped *S. altissima* at ground level in June, and in September we found a significant reduction of *S. altissima* abundance within scythed/clipped plots. We then clipped any remaining *S. altissima* stems.
2. We spread locally-gathered seeds in September and December, and we recorded vegetation data within the plots in June and September.

In 2021, we plan to repeat the vegetation monitoring to determine the extent to which *S. altissima* reduction persists into the next growing season and to identify any year-one effects of our treatments on plant community composition.

**Cecelia Hennessy LaBonte, Assistant Professor, Eureka College, and Nicholas LaBonte, Regional Ecologist, US Forest Service**

**Project: Influence of life history and ecosystem connectivity on genetic isolation of native prairie plants in original prairie remnants.**

Railroad corridors that contain remnant prairie vegetation may facilitate genetic connectivity among remnants and across the landscape. Using genotyping methods, we are measuring genetic diversity and isolation in original prairie remnants for species with varying pollination mechanisms and life histories. Our study species include little bluestem (*Schizachyrium scoparium*), prairie dock (*Silphium terebinthinaceum*), pasture thistle (*Cirsium discolor*), prairie sunflower (*Helianthus pauciflorus*), sawtooth sunflower (*H. grosseserratus*), and pale purple coneflower (*Echinacea pallida*). In the summer of 2018, we collected 628 plant tissue samples from nine prairie remnant sites across central Illinois. In 2019-20, we extracted DNA and prepared samples for multiplex fragment analysis. We first used the MyTaq system for PCR which resulted in unusable product. After much trial-and-error, we resorted to established techniques. We predicted that the *E. angustifolia* markers would amplify *E. pallida* due to phylogeny of the two species; however, when we ran the markers with positive controls from another researcher (J. Ison) we were not able to get *E. pallida* to amplify, even though *E. angustifolia* samples did. We are currently focusing on the *S. scoparium* genotypes, and plan to process the other four species with genotyping by sequencing (GBS) techniques, as no markers have yet been identified for those species. We will use the resulting genotypes to

assess evidence of gene flow among preserved prairie remnants near railroads to test whether the narrow grassland habitat corridors along railroad tracks help remnant native plant populations maintain gene flow.

**Suneeti Jog, Assistant Scientist; Jason Bried, Visiting Scientist; and David Ketzner, Researcher, Illinois Natural History Survey**

**Project: Prioritizing sand area wetlands using floristic quality, taxonomic distinctness, and contributions to beta diversity.**

Inland sand areas commonly referred to as pine barrens, oak savannas, and sand prairies are found scattered across the eastern deciduous forest and western tallgrass prairie ecotone of the U.S. northeast, northern Great Lakes, and upper Midwest. Many of these areas are protected and managed and contain a diverse “wetscape,” or a diversity of wetlands across the landscape. We propose a method for prioritizing sand area wetscapes on the basis of floristic quality, phylogenetic diversity, and compositional uniqueness. We will define floristic quality by species richness, ecological conservatism, and native status; phylogenetic diversity by average taxonomic distinctness; and compositional uniqueness by statistical contribution to beta diversity. A priority wetland should have a (relatively) high floristic quality score, high average taxonomic distinctness, and strong or significant contribution to beta diversity. Wetland sites are ranked by each metric and then prioritized based on the sum of ranks. Resulting prioritizations will help to strategize protection and management actions across the wetscapes of globally and regionally rare sand areas. We will demonstrate and apply the approach by compiling comprehensive vascular plant species lists from a dozen wetlands at the Braidwood Sands Area, one of the best quality sand area remnants in Illinois (Phillippe et al. 2008 <https://doi.org/10.2179/07-5.1>).

**Kelly Ksiazek-Mikenas, Assistant Professor, and Norbaya Durr, Undergraduate Student, Elmhurst University**

**Project: Can increasing phylogenetic and microbial diversity on green roofs help conserve native forbs in Illinois?**

Anthropogenic activities continue to alter habitats both globally and locally. Land use change can lead to homogeneity, decrease biodiversity, and cause extinction cascades which imperil our native plant species. Green roofs, which are specifically-engineered rooftops, have the potential to help conserve native plants, including those that are threatened or endangered. Yet, green roofs are also harsh microclimates and plant species success may be dependent upon facilitation within community assemblages. Understanding native species community and population interactions that promote facilitation may help predict which native species could benefit most from conservation-based green roof design. Facilitation in growth and survival may be provided by diverse plant communities or below-ground symbiotic microbes. Arbuscular mycorrhizal fungi (AMF) are known to increase germination rates, nutrient and water uptake, and photosynthesis in harsh habitats similar to green roofs. Therefore, in this investigation we will test the hypotheses that native forbs grown on green roofs will experience increased survival and growth when they are grown in (1) communities with greater plant phylogenetic diversity and (2) soil inoculated with symbiotic AMF. Our experimental design includes pairwise comparisons of ten native Illinois species grown in four diversity treatments both with and without added AMF inoculum. We will measure survival, growth, cover, and AMF infection in all treatments over one growing season. Understanding the factors that contribute to plant survival will aid in designing future green roofs to maximize their conservation potential.



**Libby Shafer, Graduate Student, DePaul University**

**Project: Evanston Host Plant Initiative: Native Flowers for the Rusty Patched Bumble Bee**

Cities are made up of a mosaic of small and fragmented habitat patches, including residential yards, which have demonstrated to be effective in increasing the abundance of pollinators when native wildflowers are grown (Goddard et al. 2010). The rusty patched bumble bee (*Bombus affinis*) is an endangered pollinator whose population has declined over 87% since the mid-1950s. It has historically resided in urban areas in the midwestern and eastern United States and Canada, making the Chicago region an important zone for efforts to conserve the species. *B. affinis* relies on at least 38 flowering native plants in Illinois, which provide foraging resources when planted in large densities with blooms throughout the growing season (FWS & DOI 2018). This socioecological research project aims to use iNaturalist and ArcGIS to map connectivity between existing and new native host plants that citizen scientists grow to help conserve *B. affinis* in Evanston, Illinois. Citizen scientists will submit plant and pollinator observations to iNaturalist. Crowdsourced data and geospatial mapping will enable me to analyze habitat connectivity, document pollinator visitors, and provide better foraging habitat for bees and pollinators. Because community involvement is essential for urban conservation efforts, I will survey and interview participants to understand whether or not people view their yards as spaces for conservation, and if this planting project will shift their perception of the role they can play in urban pollinator conservation. This project partners with [Natural Habitat Evanston](#), a local organization that plans to continue the project beyond my thesis.

**Alexandra Touloupas, Graduate Student, Northwestern University and Chicago Botanic Garden**

**Project: Climate change, habitat suitability modeling, and Illinois rare plants.**

Protecting rare species through conservation and monitoring is crucial to preventing their extinction. Habitat suitability modeling (HSM) can improve the efficiency of these efforts through geospatial analysis of rare plant niche dynamics. I propose using HSM to determine the potential distribution of Illinois bog and fen rare plant species. HSM uses known occurrence data and ecological niche requirements to statistically predict the potential distribution of rare plant species habitat in GIS. Statistical analysis through modeling can quantify how certain environmental variables such as temperature or precipitation influence the presence or absence of a species. HSM maps the required environmental variables and locates matching habitats in geographic space.

Modeling rare species can increase the accuracy and efficiency of demographic monitoring by isolating areas of suitable habitat for more targeted survey efforts. This modeling helps to visualize rare plant distribution and occurrence patterns, offering insight into rare species dynamics that are not obtainable through field observations alone. This is especially important as nearly 80% of rare and endangered plants in Illinois are predicted to experience declines due to climate change (Milano-Flores et al, 2018). The data collected through HMS can help determine the current status of Illinois rare species and how they might tolerate the impact of climate change in the future. Climate variables such as temperature and precipitation are predicted to change in the future and may surpass the threshold for rare species persistence. Insight into the niche requirements and distribution of rare plants can provide more targeted monitoring efforts and conservation goals.

## Survey Grant Recipients and Projects

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### Christopher Benda, Botanist

**Project: Existence and recovery surveys for *Heteranthera reniformis*, kidneyleaf mud plantain, and *Styrax americanum*, American snowbell bush, in Illinois.**

*Heteranthera reniformis* is a rare annual plant that occurs in shallow water and mudflats. It is a state endangered species and Hill (2006) refers to three occurrences in Illinois, in Alexander, Pope, and Union counties. This species could easily be misidentified as *Heteranthera multiflora* and sometimes they occur together (Hill 2006). They are best distinguished by floral characters; *H. multiflora* has purple filament hairs and *H. reniformis* has white filament hairs, according to the *Flora of North America*. Additionally, recent studies indicate two additional *Heteranthera* species, *H. missouriensis* and *H. pauciflora*, are closely related to *H. reniformis* (Horn 2002). *H. missouriensis* is reported to occur in St. Clair and Union counties and little is known about this rare plant in Illinois. There is much to find out about *Heteranthera* species in Illinois. Extensive surveys in suitable habitat may result in new populations and a better understanding of the genus in Illinois.

*Styrax americanum* is a rare shrub that occurs primarily in the swamps of the coastal plain of southern Illinois, but also in wetlands near the Wabash River, and there is one isolated population in the Kankakee Sands area. It is a state threatened species that occurs in 11 counties in Illinois. It is easily identifiable, especially when flowering or fruiting. A comprehensive survey is recommended to ascertain the status of this species in Illinois because there may be many healthy, sizable, and protected populations in Illinois to warrant delisting.

### Jim Johannsen, Director of Land Conservation, Jo Daviess Conservation Foundation, and William Handel, Plant Ecologist/Botanist/Restoration Consultant

**Project: An existence survey of *Rosa acicularis* and a recovery survey of *Circaea alpina***

The investigators will conduct an existence survey of both element occurrences (EOs) of *Rosa acicularis* and will conduct a recovery survey of both EOs of *Circaea alpina*. In addition, two reports of *C. alpina* occurrences that are not contained in the Illinois Natural Heritage Database will be investigated.

### Susan McIntyre, Assistant Researcher, Illinois Natural History Survey (conducting the survey project as an independent researcher)

**Project: Milking the records: Conducting existence surveys for pink milkwort (*Polygala incarnata*) in Illinois.**

This project will consist of surveys of historic and potential new occurrences of *Polygala incarnata* (pink milkwort), a state endangered plant species in Illinois. The full historic distribution of *P. incarnata* in Illinois is unknown, but populations have greatly suffered from loss of prairie habitat, reduction of burning, and encroachment by woody and invasive species, as well as native competitors. The remaining isolated populations are spread across the state, potentially subjecting them to loss of genetic diversity, unavailability of pollinators and seed dispersers, and increased susceptibility to destruction from environmental stochasticity, herbivory, and pathogens. In addition, the species' small stature, far-flung distribution, and highly variable annual occurrence have made regular censusing difficult. Using historic records and GIS analysis of potential habitat, this project will attempt to improve understanding of the current status of pink milkwort in Illinois and its potential for recovery or management where it is still found.

## Chapter News

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**Forest Glen Chapter:** On June 26, 2021 we visited Beadles Barrens Nature Preserve for a rare tour of this privately-owned nature preserve in Edwards County, IL (approx. 2.5 hours south of Champaign, IL). This priceless remnant is home to prairie as well as open oak woodland and a unique post oak barrens community. A study in the early 2000s documented over 300 plant species. Several rare species occur at the site.

On August 7, 2021 we visited Keith Horn Prairie, a privately-owned nature preserve in Fayette County, IL (approx. 1.75 hours south of Champaign, 1.5 hours south of Springfield, and 2 hours north of Carbondale). This priceless remnant is home to prairie as well as open oak woodland and a seep community. An ongoing study of this site by retired IDNR plant ecologist Bill McClain has documented over 600 plant species. Bill graciously agreed to lead us on this tour. Several rare species occur at the site.

**Central Chapter:** Central Chapter is gradually resuming normal activities! We kicked off the spring season with several field trips, including April visits to the properties of members Bruce Semans (thanks to Chris Benda for leading!) and Kevin Veara, followed by a May outing to Litchfield's Route 66 Prairie guided by Henry Eilers. A fourth tour occurred on June 19th, a visit to the home of member Carol Anderson. Carol has dedicated years to developing her extensive native plant gardens. A successful pre-order tree and shrub sale was held in May, in lieu of the usual plant sale that was cancelled for a second year due to COVID. We are planning to resume regular monthly meetings in later this year, beginning with a meeting, brown bag dinner, and tour of Nipper Wildlife Sanctuary.

**Northeast Chapter:** The Northeast Chapter has gathered for several in-person events this spring and summer, each of which has filled to capacity! In May and June we continued our Birds & Botany collaboration with Chicago Ornithological Society with visits to LaBagh Woods and Orland Grassland to explore these vastly different habitats. In June and July we joined with Powderhorn Prairie and Deer Grove stewards to collect native seed. In August and September we're touring Middlefork Savanna, Bunker Hill, and Somme Prairie Grove. All our events are listed on our chapter page on the INPS website at <https://illinoisplants.org/northeast-chapter/>. Reach out to [northeast.inps@gmail.com](mailto:northeast.inps@gmail.com) if you are interested in leading a hike or other event with our group!

**Quad Cities Chapter:** Wednesday, September 15, 6PM. Bob Bryant will give a presentation on "Ferns of the Quad City Region - Their Identification, Haunts, Uses and Folklore" at the Nahant Marsh Education Center in Davenport, IA. Saturday, September 18, 9AM. Field trip to St. Pat's Prairie Restoration Project and to the Tim Toal created/restored prairie (started in 1986) in Milan. Afterward folks will be free to depart or go as a group to have lunch at a chosen restaurant.

## Roundpod Primrose-Willow Rediscovered in Illinois After 160 Years

By Paul B. Marcum, Eric Ulaszek and David Ketzner, Illinois Natural History Survey.

Photos by Paul B. Marcum

*This story originally appeared in the Winter 2020-2021 edition of Illinois Audubon, a quarterly magazine produced by the [Illinois Audubon Society](#).*

Welcome back, welcome back, welcome back!

WELCOME BACK to the Illinois flora, roundpod primrose-willow (*Ludwigia sphaerocarpa* Ell.)!

Dr. Robert H. Mohlenbrock's 4th edition of the *Vascular Flora of Illinois* (2014) lists eight species in the genus



*Ludwigia*, but one species has not been seen in the state for many years. The roundpod primrose-willow has long been considered extirpated from Illinois, and this *Ludwigia* species had only ever been known from two confirmed specimens, both collected on August 18, 1860 in Cook County. That's right, it was last seen in Illinois more than 160 years ago and on the opposite end of the state. Last year the story of this species in Illinois changed. Here is how the story unfolded.

Deep in the swamps of Illinois Audubon Society's (IAS) Round Pond Wildlife Sanctuary in southeast Pope County, we waded in up to our waists in the murky, duckweed-covered water. Cottonmouths (*Agkistrodon piscivorus*) and giant Dolomedes fishing spiders were all around, but plant species diversity was low. Much of the plant diversity in swamps is found around the buttressed bases of bald cypress (*Taxodium distichum*) and swamp tupelo (*Nyssa aquatica*) trees or at the shallow swamp margin. In the distance, toward the center of the swamp, we saw something different. There was a small opening. We slowly and methodically trudged in that direction to investigate.



Round Pond, Pope County, Illinois, November 4, 2019.



Floating mat in the center of Round Pond, August 20, 2019.

In the middle of a bald cypress/tupelo swamp was a floating mat. Decomposed remains of sedges (*Carex* spp. and *Scirpus* spp.), smartweeds (*Persicaria* spp.), pennywort (*Hydrocotyle ranunculoides*), frogbit (*Limnobium spongia*), and other plants had built up over many years and floated to the surface. There was enough stability to this floating mat to provide support for several shrubs and even small trees. When we grabbed the tree trunks, they moved freely, only being anchored in the floating detritus. We had never seen anything like this in any other Illinois swamp. We attributed this aberration to the unique setting of this swamp. Most Illinois swamp communities are alluvial, but this one is perched and occupies an old lake terrace. While the water level fluctuates greatly in nearby swamps, this one stays relatively stable, even through the heat of summer. Also, the

water here is extremely cold and appears to be spring fed. We encountered several rare species. Plant diversity in this area was exceptional. We planned to focus our attention on this unusual spot.

This very spot would reveal to us the sanctuary's greatest secret, the roundpod primrose-willow. We first encountered very few of this species in the heat of July, a month or so before it would begin to flower. Drawing upon my work on a project to document Illinois' extirpated plant species, I suspected what we had found. Even in a vegetative state this species has some distinctive features, one being the plant's peeling, inflated, and spongy stem at its base. Yet, it was a long few months until the moment we could find any fertile stems to confirm our suspicions. When we returned to the same area in August and September, we found suitable material to confirm our identification. There was no doubt; we had found a long-forgotten plant.



Roundpod primrose-willow (*Ludwigia sphaerocarpa*) whole plant showing the inflated, peeling, and spongy base, September 30, 2020.



Roundpod primrose-willow (*Ludwigia sphaerocarpa*) in fruit, September 30, 2020.

In Illinois, more than 130 extirpated plant species have been documented. Upcoming is a list of Illinois Plant Species of Concern, being published by the Illinois Native Plant Society. At IAS' Round Pond Sanctuary, in 2019, we were able to document 619 plant species, including 59 populations of 10 state-listed species. Five of these rare plant species were previously not known to occur in the area.

Our hope is that interest will be renewed, and the result will be rediscoveries of additional plant species in Illinois. Gone—or maybe just unobserved—but never forgotten.

#### References:

Mohlenbrock, R.H. 2014. *Vascular Flora of Illinois. A Field Guide*. 4<sup>th</sup> edition. Southern Illinois University Press, Carbondale. 536 pp.

*Paul B. Marcum is a botanist at the Illinois Natural History Survey (INHS), part of the University of Illinois' Prairie Research Institute. He is the Associate Project Leader for Botany for the INHS Wetland Science Program.*

*Eric Ulaszek is a botanist at the Illinois Natural History Survey (INHS), part of the University of Illinois' Prairie Research Institute. He is the Botany Coordinator for the INHS Biological Surveys and Assessment Program.*

*David Ketzner is a recently retired botanist at the Illinois Natural History Survey (INHS), part of the University of Illinois' Prairie Research Institute. He worked 30+ years conducting wetland and plant surveys throughout the state of Illinois.*

## **What is influencing species composition in Illinois' riparian wetlands?**

By Brian Charles, 2020 INPS Research Grant Program Recipient.

### **Background**

Wetlands support high biodiversity and offer essential ecosystem services such as water purification and flood control. Thus, restoration of Illinois wetlands is critical in conserving our flora and maintaining ecosystem services. During restoration monitoring, plant species composition is often used to track progress towards goals. Plant species composition in wetlands is influenced by many abiotic factors, particularly hydrology and soil fertility, and documenting how these factors influence restoration outcomes is important for improving the restoration process. We set out to determine which abiotic variables were most closely related to species composition in order to elucidate the ecological processes driving patterns in species composition in restored wetlands.

### **Methods**

We surveyed 23 restored floodplain wetlands from Alexander County to Jo Daviess County. Soil samples were collected to determine soil pH, organic matter content, nitrate and phosphate content, and moisture content. To characterize the hydrologic regime within each 100-m<sup>2</sup> plot, past hydrologic monitoring data was compiled and analyzed to quantify annual hydrologic metrics related to the frequency, depth, and duration of flooding. We used a concave spherical densiometer to measure canopy cover. All plant species were identified to the species level and assigned a cover class (e.g., 1-5%, 5-25%). We performed Canonical Correspondence Analysis (CCA) to relate hydrological variables, soil variables, canopy cover, time since restoration, and latitude to herbaceous species composition. We also performed Spearman's correlation analysis (correlation coefficient represented by  $r_s$ ) to determine relationships between predictor variables and selected dominant species.

### **Results**

We found a total of 182 species across 66 plots. CCA revealed that latitude and canopy cover were primarily affecting changes in species composition, followed by ponding duration and organic matter. Reed canary grass (*Phalaris arundinacea*) was dominant in northern sites (66% average relative cover at sites north of

Springfield), positively correlated with latitude ( $r_s=0.63$ ), and negatively correlated with canopy cover ( $r_s=-0.46$ ).



*Phalaris* Wetland, Henry County



Wetland, Stephenson County

## Discussion

Our research indicates that latitude and canopy cover primarily drive trends in restored floodplain wetland species composition in Illinois. Latitude could be driving species composition trends because there is a larger species pool in southern Illinois, which may account for higher diversity and more distinct floras within southern wetland sites. In addition, northern sites were heavily invaded by *P. arundinacea*, whereas southern sites lacked *P. arundinacea*. Increases in canopy cover were negatively associated with *P. arundinacea* cover, which is consistent with previous research that shows that shade excludes *P. arundinacea*. Ponding duration and organic matter content were both important in determining the type of wetland present (i.e., marsh vs floodplain forest).

Our research shows that there is a strong latitudinal gradient of species composition in Illinois riparian wetlands. In addition, our research also adds evidence that *P. arundinacea* remains a great challenge to successful wetland restoration, especially in northern Illinois. Achieving a closed canopy at floodplain forests early on in restoration may be critical to ensuring that *P. arundinacea* does not invade.

We thank the Illinois Native Plant Society for giving us the opportunity to conduct this research.

*Brian Charles is a Master's student in the Wetland Ecology and Restoration lab at the University of Illinois Urbana-Champaign.*

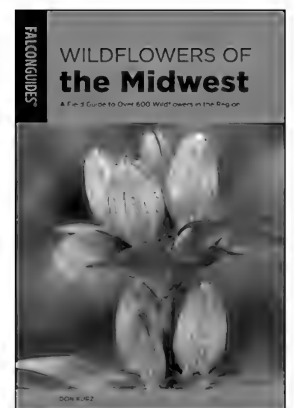
## Book Review: *Wildflowers of the Midwest*

By Mike Baltz.

As a novice plant enthusiast, I need all the help I can get identifying the dizzying array of flowers that bloom spring through fall in southern Illinois. And if you are a beginner, like me, then I think Don Kurz's new book, *Wildflowers of the Midwest*, although cumbersome to use, could be a useful addition to your field guide library.

Kurz's book covers over 600 species found in the Midwest, and photographs of each species accompany a species description with range information and comments.

The book is arranged by flower color, but within often-large color sections (several with over 150 species), plants are then ordered alphabetically based on plant family names.





Unfortunately, this is a departure from Kurz's Illinois-specific wildflower field guide, where flowers were smartly arranged by flowering season within the color sections.

As a consequence, in this guide, in the white flower section, for example, harbinger of spring and rattlesnake master end up on the same page (both *Apicaceae*) and you have to look through over 150 species before getting to spring beauty (*Portulacaceae*).

Personally, I found the 'weeds' section, which includes photographs and descriptions of 39 nonnative species, particularly useful and interesting.

In summary, while this field guide doesn't appear to offer much in the way of new information, and Kurz has already written the *Wildflowers of Illinois* (which is easier to use, in my opinion), this guide's regional approach does feel like it could occupy a sweet spot for beginners between a state-specific guide and something that covers too large a geographic area.

*Wildflowers of the Midwest* author Don Kurz is a longtime INPS member and author of *Prairie Wildflowers*, *Illinois Wildflowers* (recently revised and updated), and several other native plant field guides and outdoor travel guides.

Mike Baltz has a Masters Degree in Environmental Science from Miami University and a PhD in Avian Ecology from the University of Missouri-Columbia. He is currently Coordinator for the [Let the Sun Shine In program](#), a conservation program dedicated to restoring and maintaining southern Illinois oak ecosystems.

## Invasive Species News: Japanese Chaff Flower



For those who were not able to attend the live Japanese Chaff Flower Summit, there is a [YouTube playlist](#) available for all of the presentations. This summit focused on ecology, impacts, and management of the invasive Japanese chaff flower (*Achyranthes japonica*).

## Other News, Web Links, & Publications

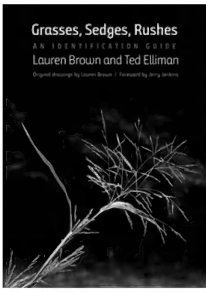
### Mosses Of The Northern Forest – A Digital Atlas

*Mosses of the Northern Forest – A Digital Atlas* is a collection of 1,650 high resolution images, with descriptions, diagnostic diagrams, and ecological information for 258 species. Published in April 2020, the Atlas is distributed as a bookmarked pdf file of 1,107 pages (1.02 GB) and available by download only. The images contained on this download are provided for individual noncommercial use only and may not be reproduced or distributed in any form without the written permission of the Northern Forest Atlas Foundation. Educators may obtain a limited permission to reproduce images by contacting the Administrator at <https://northernforestatlas.org/>. Additional publications and charts are also available on this website.

### Grasses, Sedges, Rushes – An Identification Guide

Yale University Press has published an elegant and easy-to-use updated and amended revision of Lauren Brown's seminal *Grasses: An Identification Guide*, which was first published in 1979. While maintaining the spirit and goals of the original edition—a portable, straightforward, and user-friendly guide for naturalists and plant enthusiasts—the new edition features more than 100 grasses, sedges, and rushes that are presented with

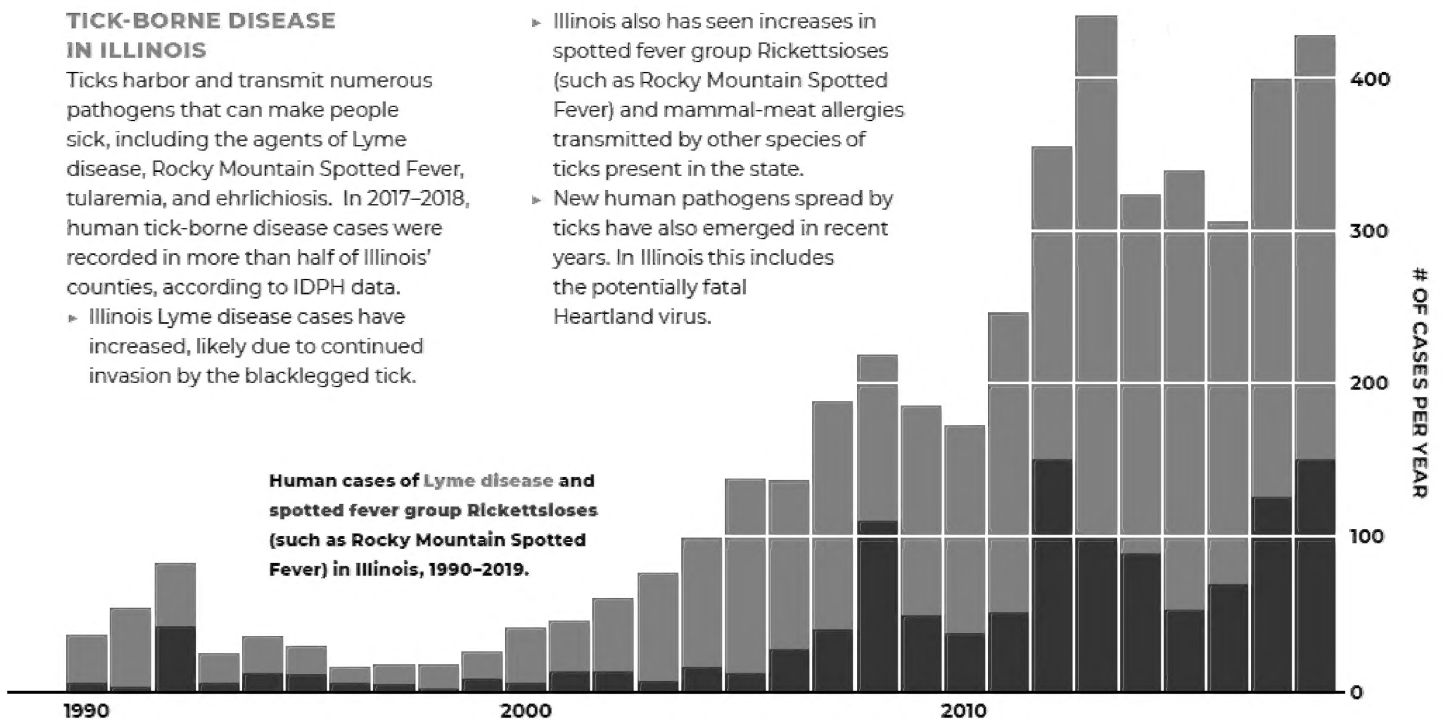




line drawings and color photographs, concise descriptions, and details on the uses of various plants throughout history. “No one will be able to claim that the identification of grasses, sedges, and rushes, which are of fundamental importance both environmentally and economically, are simply ‘too difficult’ after they have learned to use this excellent guide.”—Peter Raven, President Emeritus, Missouri Botanical Garden. The Guide is available at <https://yalebooks.yale.edu/book/9780300236774/grasses-sedges-rushes> as well as other major booksellers.

## Tick, Tick, Tick

Less than two years ago, the Medical Entomology Laboratory at the Prairie Research Institute (PRI) launched Illinois’ statewide tick surveillance program in partnership with the Illinois Department of Public Health (IDPH). The program, which is scheduled to continue for another 2.5 years, has already dramatically improved understanding of ticks and tick-borne diseases in Illinois. A fact sheet is available at <https://medical-entomology.inhs.illinois.edu/files/2021/02/PRI-tick-surveillance-factsheet.pdf> and check out the tick surveillance data for Illinois at <https://go.illinois.edu/illinois-ticks>.



## Bumble Bee Strategy for Climate Change

Bumble bees rely heavily on pollen resources for essential nutrients as they build their summer colonies. A study reported in the May 2020 issue of *Science* magazine made observations suggesting that bees may have strategies to cope with irregular seasonal flowering. When faced with a shortage of pollen, bumble bees actively damaged plant leaves in a characteristic way, and this behavior resulted in earlier flowering by as much as 30 days. Experimenters were not able to fully replicate the results with their own damage, suggesting that there is a distinct method that the bees use to stimulate earlier flowering. Read more at <https://science.sciencemag.org/content/368/6493/881.full>.

## Green-flowered milkweed saved from the mowing crew!

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Last May, my friend Abel Kinser spotted a rare occurrence in Williamson County along Highway 13 in Carterville. A clump of stems belonging to green-flowered milkweed (*Asclepias viridis*) were in full bloom! This species is uncommon in Illinois, occurring only in 13 counties in the southern till plains of south central Illinois: <http://bonap.net/MapGallery/County/Asclepias%20viridis.png>). This possible county record observation was a neat find as I have not seen this species anywhere this far south in Illinois. I told my friend and fellow botanist Travis Neal about it and when he went to photograph it, he noticed a mowing crew down the road, proceeding toward the plants, with the intent to mow them down while in flower. Travis had to report to work, so he asked his girlfriend's sister, Amy Frailey, and his roommate, Frank Ford, to go out there, sit by the plants, and prevent them from inevitable destruction. To their surprise, the mower operators were receptive to their pleas and mowed around the individuals! The plants were able to produce seed pods and will hopefully persist at this location.



Green-flowered milkweed (*Asclepias viridis*). Photos by Chris Benda.

Have other success stories about saving native plants from threats? Send them to me (Chris Benda) at [botanizer@gmail.com](mailto:botanizer@gmail.com).

### WATCH:

- Zoom recording of an INHS Seminar “Climate change, plant distributions and life history traits: a look at trailing and leading range edges” by Dr. Emily Dangremond, Roosevelt University. Published at [https://mediaspace.illinois.edu/media/t/1\\_9jqzgaoe](https://mediaspace.illinois.edu/media/t/1_9jqzgaoe).
- The 2021 *Illinois Climate Assessment* by The Nature Conservancy, in collaboration with experts at the University of Illinois at Urbana-Champaign, the University of Illinois at Chicago, and Northwestern University, was published in spring 2021. On May 17, 2021, the assessment lead authors summarized the report findings in a public webinar. Both the report and the webinar recording are available at <https://stateclimatologist.web.illinois.edu/illinois-climate-change-assessments/>.
- “Preserving Illinois Prairies” is a PBS documentary produced by central Illinois station WTVP. The half-hour video is available at <https://www.pbs.org/video/preserving-illinois-prairies-kfcbal/>.

ILLINOIS NATIVE PLANT SOCIETY

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New England aster  
(*Symphyotrichum novae-angliae*).

Photo: Christine Prairie

## The Harbinger Summer 2021

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